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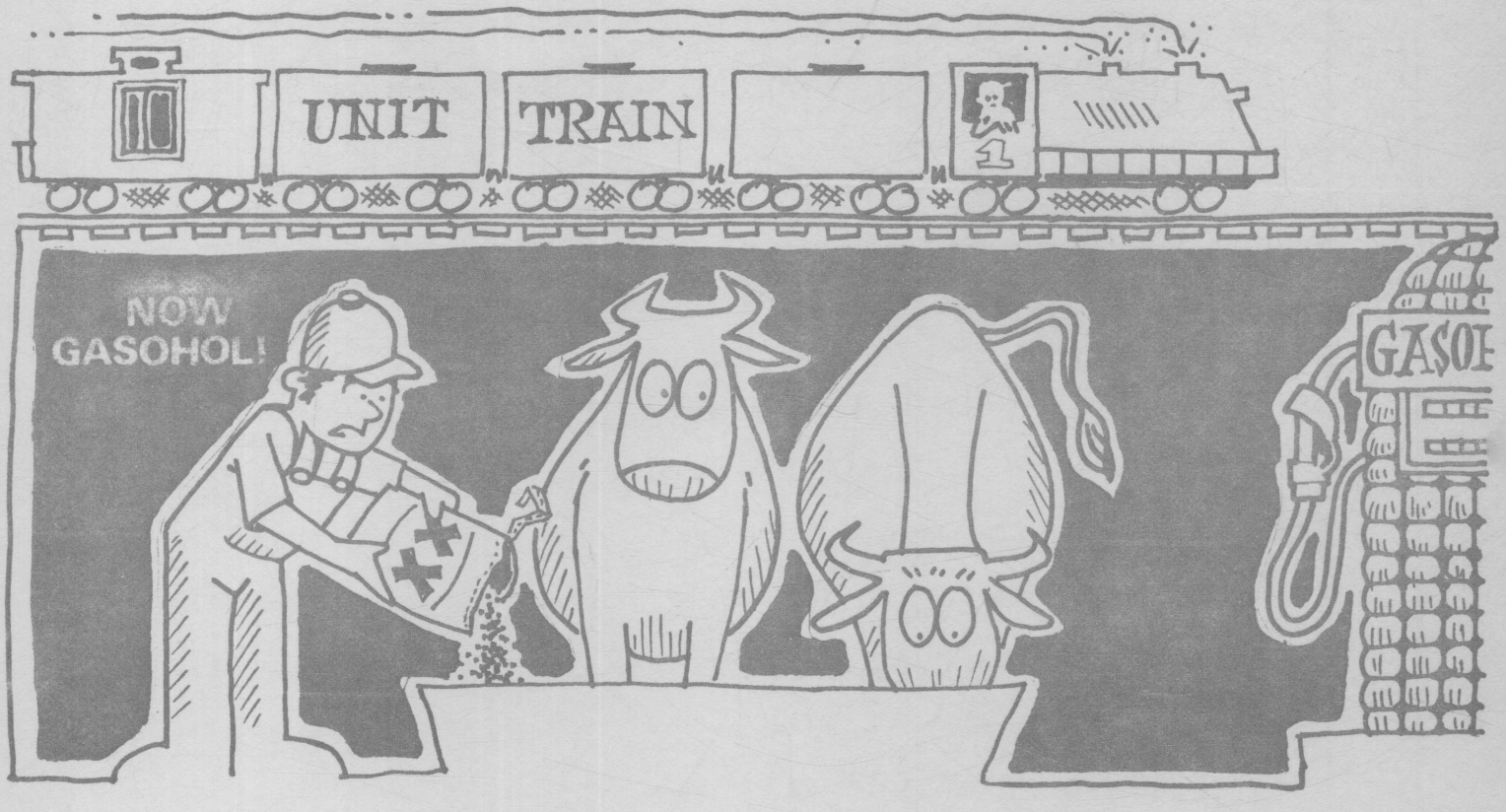


# OHIO'S AGRICULTURE IN THE 1980's

## SOME POLITICAL AND ECONOMIC CONSIDERATIONS

by

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# Ohio's Agriculture in the 1980's: Some Political and Economic Considerations

by
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This presentation is designed to provide information useful in developing guidelines for assessing the configuration of Ohio's agriculture in the 1980's. It does so by estimating ranges of probable levels of economic values and some of their direct or indirect effects. Political variables like the Soviet grain embargo make this a hazardous occupation.

The chaotic conditions in the Near East almost assure our increased use of agricultural products for energy production. This may not be a lower cost source of energy than petroleum, but its stability is attractive. The expectations of people in using renewable energy production (e.g. gasahol) from agriculture in the 1980's is quite variable. At one extreme, it could provide a new grain market almost as large as our present export market. The implications of this condition are quite different than for very low estimates of the use of agricultural products for gasahol production. The assumption used here will be for moderate uses of grain for gasahol.

The estimates are not predictions of what will occur, but of most likely events considering past and current events plus some expectations about the future. The presentation is designed as a starting point for discussion.

Clearly, many factors will influence returns on agricultural investments between now and the end of the 1980's. The performance of the U.S. economy will have much to do with the cost of agricultural inputs and therefore supply conditions. The domestic demand for food and fiber products is also dependent upon the performance of the economy and world food demand. During the last decade, U.S. agriculture has been directly influenced a number of times by major changes in

world food supply and demand conditions.

Public policy toward food production and gasahol in the U.S. will affect supply and demand conditions and therefore prices. Public policy has been and will be based upon domestic and world food conditions. Three previous embargoes to protect domestic consumers have been endured. But the current Soviet embargo is the first time that food has been used as an overt political weapon.

For the reasons cited above the presentation will be divided into 1) general economic prospects, 2) input supplies, 3) domestic supply and demand conditions, 4) world market conditions, 5) public policy, 6) meaning to U.S. agriculture, and 7) a sketch of prospects for Ohio's agriculture.

## THE GENERAL ECONOMY

The outlook for agriculture will be affected significantly by the performance of the U.S. economy. The general price level, the rate of growth, interest rates, and employment levels will affect the cost and availability of farm inputs such as land, labor, credit, fertilizers, chemicals, and machinery. The demand for food and, therefore, the prices of farm products also depend largely upon the strength of the general economy.

### Inflation

Inflation is expected to continue at substantially higher rates than those experienced during the 1950's and early 1960's. During most of that period, the annual increase in the consumer price index typically ranged from 1 to 2 percent. Between now and 1990, we expect average annual increases in the consumer price index to range from 7 to 10 percent. Rates higher or lower than this may occur for some periods. This assumes that politically we will hold to monetary, fiscal, tax and regulatory policies, with appropriate adjustments as changing conditions dictate, for 3 to 5 years. The intent should be to improve productivity and reduce the current inflation rate. The impacts of an 8 percent rate of price increase on corn, a tractor and farmland prices are illustrated in Table 1.

Table 1. Prices in 1990 Under An Assumption of 8 Percent Annual Price Increase

| Year | Corn, Bu. | Tractor | Farmland/Acre |
|---|---|---|---|
| 1978 | $2.10 | $25,000 | $1,500 |
| 1990 | 4.90 | 58,290 | 3,780 |

NOTE: The table illustrates the meaning in dollar terms of an 8 percent rate of price increase in selected agricultural inputs and products. This is not a prediction but illustrate the dollar impact of an 8 percent price increase through 1990.

Rate of Growth

The real annual rate of growth in goods and services produced (real Gross National Product) will likely range from 1 to 3 percent. This is a slower growth rate than during the 1960's and early 70's. When inflation is added to the real growth rate we get the annual change in the "nominal" or money value of goods and services produced. Nominal GNP is expected to grow at 8 to 12 percent annually. Such growth was typical in the 1970's but is higher than that which occurred in the 1960's.

Real growth in the economy adds to the purchasing power of consumers and means that, assuming other factors constant, the demand for food will continue to grow through 1990.

Interest Rates

Long term interest rates are expected to range from 10 to 15 percent. As long as the annual rate of inflation continues at 7 to 10 percent, lenders will be inclined to maintain or even raise long term rates to even higher levels. In any case, high interest rates will continue to make capital investment costly for farmers.

Unemployment

Unemployment rates will probably remain above 6 but below 8 percent through the 1980's. Unemployment rates of around 4 percent were observed from 1950 to 1974. Federal spending, designed in part to counter the relatively high unemployment rates, is likely to continue to spur the inflationary pressures mentioned above.

Input Supplies and Prices

The average cost of all inputs used in farming will probably rise at near the rate of inflation in the general economy. Energy related inputs are expected to increase at faster rates.

Natural and L.P. gas prices are expected to rise at annual rates of 10 percent or more through 1982 or 1984. Thereafter the rates of increase will likely slow to a somewhat lower rate. Supplies are expected to be adequate for normal use, but localized shortages could accompany especially cold weather or heavy grain drying requirements.

Petroleum supplies, assuming Mid-East oil is available, will be adequate to meet demand considering substantial annual price rises for gasoline and diesel fuel through the early 1980's. Rates of price increases will be greater as we move toward 1990. This will encourage rapid expansion of gasahol production that may be supplying 10 percent of the nations liquid fuel needs by 1990. However, the cost of gasahol will be higher than petroleum products.

Nitrogen fertilizer prices will likely rise at rates faster than the general rate of inflation through the early 1980's. This is due partly to deregulation of natural gas. Also, nitrogen supplies have been ample because of large investments in fertilizer production capacity in the mid 70's. But low industry returns slowed expansion of the nitrogen fertilizer industry. The results point to tighter supplies and higher price increases in the early 1980's.

Potash fertilizer supplies will be adequate to keep price increases around the general level of inflation. Phosphate fertilizers will be available in amounts adequate for the increased rate of use but price increases may be higher than for other types of fertilizers due to the fact U.S. farmers will be competing with farmers in other countries for the available supply.

Farm Land Prices

Land prices over the next decade are likely to rise substantially. Even modest increases in land use for gasahol production added to expected increases in domestic and world food needs will assure relatively high rates of increases in land values.

Higher grain prices and land prices will be concentrated in the Corn Belt. Our comparative advantage will be strengthened even further by the rapid escalation of energy costs for Western irrigated farm production. By 1990 we will likely look back over the period and may see average annual increases of exceeding the inflation rate by 4 to 6 percent. But large deviations in domestic and foreign crop production and consequently use, could result in price changes well outside of this range in one or more years.

Increases in land rental rates are expected to stay close to the rate of inflation. In any case land rental rates tend to rise slower than land prices.

Hired Labor

The cost of hired labor will rise slightly faster than the rate of inflation during the next several years. This is due in part to the effect of rising social security taxes and costs of unemployment insurance. As these increases are absorbed, farm wage rate increases will drop back to the rate of inflation.

## DOMESTIC SUPPLY AND DEMAND FOR FOOD

The rate of growth in food consumption by domestic buyers will grow by about 1.1 to 1.4 percent annually over the next 10 years. Population will grow at about

0.8 percent to 0.9 percent per year. The expected real income growth rate of around 1 to 3 percent will add from .20 to .50 percent to the rate of growth in raw food product needs. Consumption rates for some food will grow faster than for others, however.

All meat consumption may move from its current annual level of almost 230 pounds per capita to over 250 pounds by 1990. Beef and veal use will rise from the low levels of 1980. Rates of growth in pork and poultry consumption will be higher than beef or veal. The efficient energy converters of pork and poultry will be at an advantage compared to beef. This is because prices of livestock will increase dramatically due to higher grain prices.

Per capita consumption of fluid milk and milk products in the past decade has remained nearly constant. We will see very little change from the 1975-79 level of 550 pound per person. Egg use will be fairly constant at around 275 eggs per capita. Citrus and non-citrus fruit consumption will remain over 200 pounds per person. Vegetable consumption, on the other hand, is expected to grow from its late '70's level of near 225 pounds per capita to over 250 pounds by 1990.

Domestic production of meat, particularly beef, is expected to be inadequate to satisfy domestic consumption. Imports will grow to meet this shortfall. The share of the domestic market provided by beef and veal imports may rise a point or two from the current level of near 7 percent of U.S. consumption.

A large expansion in feed grains will be needed. Corn production will need to rise from the 1975-77 average of 6.2 billion bushels to over 10 billion bushels in 1990 to meet the livestock, gasahol and export needs. Sorghum and other crops along with crop residues, forestry waste etc. can supply the raw products for some alcohol. This 60 percent increase in corn output will need to come from both greater acreage and higher yields. U.S. yields averaging 120 to 125 bushels per acre from 80 to 83 million acres will be required to produce 10 billion bushels of corn.

Soybean production will need to increase from the 1975-79 average of 1,750

million bushels to near 2,600 million bushels in 1990. This 50 percent increase will require 79 to 81 million acres and average U.S. yields of around 32 to 33 bushels per acre to foster the growth in soybean output required.

Soft red winter wheat production may drop slightly even though yield increases of around 20 percent should occur. Speciality crop production, expecially vegetables, bedding flowers, etc. should expand.

In the U.S., oat acreage will continue to decline. Some acreage formally allocated to wheat in Ohio will switch to corn and soybeans. Other cropland will become available from draining, clearing woodlots, cleaning out fence rows, and clearing of abandoned homesteads. Less pasture and hay will make more land available for crop production in Corn Belt agriculture. No till and other cultural practices make it possible to crop areas formerly devoted to grass. Environmental concerns (water quality and soil loss) will be critical issues. Debate over conservation of our soil resources will intensify as the long run impacts of "mining" these resources become more apparent.

## WORLD MARKET CONDITIONS

The physical volume of U.S. agricultural exports is expected to trend upward at an average of 3 to 5 percent annually. But the rate of growth could vary substantially from year to year, far exceeding the 3 to 5 percent bounds. The U.S. will increase its share of world grain markets from 53 percent of the total today to near 65 percent by 1990. Production expansion possibilities in the major grain exporting nations of Australia, Argentina, Brazil and Canada have constraints that provides the U.S. the opportunity to expand exports substantially.

The fastest rates of growth in exports are expected for corn and soybeans. Wheat exports are likely to expand at a more modest pace. Tobacco exports will continue as an important outlet for Ohio growers. Livestock product exports like hides, by products, etc. will be of growing importance to the animal agriculture sector.

The rate of growth in exports for individual commodities will be especially unstable. The uncertainty created by world weather patterns as well as the emergence of state trading are likely to generate fairly large year to year variations in export growth.

Although the Centrally Planned Economies may make large purchases from time to time, the largest and most dependable markets for U.S. agricultural exports, especially food and feed grains and soybeans, will continue to be the industrial nations like Japan and the European Community. The developing countries are becoming increasingly important markets as their incomes per capita increase.

World food supplies are expected to increase about 1 percent per year. This rate of growth provides neither more food per person nor more food of higher quality. Serious regional food deficits are likely to occur in parts of Asia, Africa, and Latin America at various times.

Greater emphasis will be given to development assistance and internationally held grain reserves to help the low income countries. U.S. food aid will continue to be a small share (under 1%) of total U.S. agricultural exports.

For these conclusions to be valid one must assume that commercial trade will be encouraged and that nationalism and self sufficiency in the U.S. and around the world will be thwarted by recognition that trade, including agricultural products, contributes to higher levels of living.

Imports of farm products on a volume basis will continue to grow slowly for both competitive and non-competitive products. The food and fiber sector contributes mightily to earning foreign exchange helping to alleviate our balance of trade and balance of payments situation. This mitigates toward policies and programs encouraging the export of large quantities of U.S. farm products.

## DOMESTIC FOOD AND AGRICULTURAL POLICY

The general framework within which U.S. food and agriculture policy is implemented is not expected to change drastically between now and 1990. This

statement holds in spite of the recent Soviet grain embargo. Regardless of which political party is in power, farm programs will likely continue to include provisions for: target prices, loan rates, flexible supply control and government subsized storage programs. All are designed, in part, to maintain a band around farm prices.

The impacts of the program can be affected significantly through discretionary actions by the Secretary. Among the options open to the Secretary are: adjustment of the loan rate, the use of a set aside program and early access for farmers to the reserve program. Likewise, the Secretary can offer incentives for putting grain into the reserve.

Different Secretaries of Agriculture will make different choices within their set of options. Nevertheless, all will be concerned about maintaining a competitive position for the U.S. in world trade and reducing budget costs created by deficiency payments required to fill any gap between target and market prices. At the same time they will feel pressure to maintain prices which support farm income.

For these reasons, any Secretary will have incentives to maintain loan rates (price supports) at or below world market prices. Set aside provisions will be used sparingly and the actions of the Secretary will be affected by world weather conditions and therefore the supply and price of grain in world markets. A major crop failure in any part of the world would maintain market prices high enough to reduce or eliminate reliance on price supports and deficiency payments. Good weather which leads to rapid accumulation of world stocks of grain would put pressure on the Secretary to consider aggressive use of set-aside provisions and farmer held reserves. Even then, however, concern over potential Treasury costs and the competitiveness of the U.S. in world grain markets would constrain the use of set aside and price support provisions.

## MEANING TO U.S. AGRICULTURE

These national and international changes will "push and pull" farmers in diverse directions in the next decade. At times, narrow margins and continued price uncertainty will test the capabilities of many operators. In the final analysis, the individual farmer's decisions and his actions bring about success or failure. Following are some major factors that individual producers may want to consider.

### Labor Productivity

Output per worker in farming has increased at an annual rate of about 6.0 percent in the last decade. To keep pace with this competition, the average farmer will need to increase his output per worker at an annual rate of 6.0 percent. To catch up with the average producer, the younger and/or smaller commercial farmer needs to think of annual increases in output per worker exceeding 10 percent. Some of the increase can come from improving yields but the remainder must come from more intensive operations or farm enlargement.

### Minimum Size Economic Units

The larger commercial farm operations will continue to move toward two, three or four man units. This provides the opportunity for labor specialization and for the amenities enjoyed by nonfarm people like vacations and shorter work week. Producers wanting to expand need to figure on the production per man of 500-600 acres of field crops. In the livestock enterprise, including feed production, size of operation per man needs to reach 800-1000 head of hogs marketed per year; about 50-60 dairy cows; 250-300 beef cows, and in cattle feeding 400-500 steers marketed.

For enterprises with feed purchased, an egg laying operation needs to be 40,000-50,000 hens per man; an outdoor turkey operation should number 40,000-50,000 per man per year and 250,000 broilers per man per year. Over 60 percent of the cattle fed are in lots of 20,000 head or more.

Corporate or Family Farms

Corporate ownership of farms will increase, but major growth by nonfarm corporations does not seem likely. Today only about 1 percent of all the farms are incorporated. They do sell near 15 percent of the farm products. The traditional family farms will likely move toward incorporation to ease the transfer of property from one generation to another, utilize tax advantages and to acquire capital. Most have 10 or fewer shareholders and are indistinguishable from other farms operated by partnerships or single proprietors that are typically considered family farms.

Part-time Farming

The importance of part-time farming will increase. For many farmers, off-farm employment for the operator and family members may be the only way to remain in farming and achieve an acceptable level of living. In contrast, the smaller and medium sized farms may come into heavy demand by people with city jobs who wish to supplement their income by farming.

Today, one out of two farm families earn more than half their income from nonfarm sources. With a continued shift to decentralization of industry and population to rural communities, the proportions of farm families earning a major share of their income off the farm will climb even higher in the next decade.

Farm Tenure

In the U.S., full owner-operators continue to make up about 65 percent of the total. Part owner-operator status is growing and now accounts for over 25 percent of the total farm operations--up from 15 percent in 1950. Full tenancy is declining and makes up about 10 percent of the total farming operations. These trends are expected to continue. Producers are increasingly separating ownership from the use of land and other high capital resources. Today, lease or rental of land accounts for over 40 percent of all land used in farming and cash rental is increasing rapidly. High land values and high capital needs

seem likely to convince farmers to move more rapidly to leasing land and equipment.

Investment

Farm indebtedness in the next decade will rise dramatically because of inflation and the increasing size and complexity of farming operations.

The annual increase in total farm indebtedness during the last decade was about 16 percent and about 60 percent of the increase occurred in the last five years. Debt on U.S. farms as a percent of assets has varied between 15 and 17 percent in the last decade and may remain so in the years ahead. Ohio farmers debt is lower, running at 12 to 13 percent of total assets. About two-thirds of the total annual cash flow for purchase of real estate, capital improvements and production costs has been generated by income and savings. This is also true for the very large commercial farms. The remaining one-third of the expenditures was secured by real estate or tangible property. This ratio may change to a little higher proportion borrowed as we move to larger operations and some farm firms move to perpetual debt. No shortage of capital is foreseen; interest rates will likely exceed the annual rate of inflation by 3 to 5 percent.

Economic Organization and Market Practices

Increased coordination of agricultural production and marketing by the food processing and farm supply industries can be expected. Poultry, sugar cane, citrus and specialized vegetables are examples of unified vertically integrated systems linking suppliers, farmers and marketers. Our affluent society wants a steadier flow, higher quality and more standardized supply of food. The outside pressure will result in an increase in contracting and other marketing and bargaining arrangements. Some of the pressure will occur from the farmer, some from farm supply firms, and some from the processor-distributor as participants seek some resource-providing or market-assuring agreement with other participants. Some marketing efficiencies can be gained but at the loss of decision-making

freedom. The more prevalent organization may be contract integration, cooperative integration and/or vertical integration through ownership of two or more stages of production.

Producers facing lower margins, higher financial burdens, unstable markets and greater uncertainties will need to reduce risks. Creditors on large or risky loans will increasingly require borrowers to "lock in profits" through use of forward contracts and/or futures market contracts. On farm storage arrangements will continue to expand. Price instability and the need to more fully employ farm labor may encourage greater crop and livestock diversification. In cattle feeding there may be a slight movement toward more highly integrated arrangements; more slowly in hogs. There is little liklihood of tight coordination in grains.

Management Practices

Financial management, record keeping, tax management, estate planning and the form of business organization and labor management will be of increasing importance. The large investment (equity or borrowed) per farm, narrower margins, increased market coordination and quality control will necessitate such changes. The source and quality of production and market information made available by the land grant institutions, USDA, farm supply firms and marketing organizations and the interpretation of such information will be increasing importance.

## OHIO AGRICULTURE IN 1990

Commercial farms in Ohio will increase in size and decrease in number. In 1990, as many as 10 percent of the approximate 75,000 farms could have more than 1,000 acres. This compares to 1 percent of the nearly 100,000 farms in Ohio during 1975. Farms of fewer than 180 acres will continue to be consolidated. In spite of these trends, many smaller farms will remain. Many will be part-time or semi-retired farmers.

In 1990, about 90 percent of the state's cash receipts from farming will be generated by 30 percent (about 22,500) of Ohio's farms. As of 1975, the largest 30 percent of farms in Ohio generated over 70 percent of the cash receipts from farming.

The trend of farmers to depend more on nonfarm produced inputs, along with rising land values and greater acreages per farm will lead to continued growth in credit requirements per farm. Access to capital markets will, therefore, continue to be important.

In Ohio there will be a continued shift from oats, barley and hay acreage to greater plantings of corn and soybeans. By 1990 as much as 80 percent of all tillable Ohio cropland may be in corn and soybeans. This compares to about 70 percent in the 1975-1977 period and 50 percent in 1960. Increasingly wheat acreage in the southern two-thirds of the state will be followed by a soybean double crop.

Corn and soybean yields in Ohio are both expected to rise at rates somewhat faster than those for the U.S. as a whole. By 1990, average Ohio corn yields may be 130-135 bushels per acre: soybeans may average 40 to 45 bushels per acre. Along with increased corn and soybean acreage, higher yields than for the U.S. will foster a moderate gain in Ohio's share of U.S. corn and soybean production. Location and transportation advantages in Ohio will continue to be reflected in relatively favorable grain prices compared to the upper Mississippi Valley.

Hog marketings in Ohio will continue the long term decline from the 1977-79 level of 2.8 million head or 1.8 percent of U.S. hogs marketed. The hogs will be marketed from fewer but much larger producing units. The Western Corn Belt will have economic advantages due to lower corn prices than in Ohio.

Feeder calf production is expected to expand by 1990. The number of Ohio farms keeping beef cows will decrease slightly but the number of cows per herd will increase. These tendencies will be in response to greater value of salvage

feeds with stronger beef prices. Even so, Ohio's share of feeder calf production will remain near 1.0 percent of the U.S. total.

Cattle feeding in Ohio is expected to continue its decline. Feedlots will be fewer and much larger. The total number of cattle fed annually in Ohio will fall short of the 445,000 marketed annually during the 1974 to 1978 period. This was 1.8 percent of the nation's fed cattle marketings in the five year period. Premium prices for grain in Ohio is a major deterrent to expanded cattle feeding.

Dairy farms will decline in number but the number of cows per herd will increase. Average milk production per cow will rise from the current level of over 11,000 pounds to over 13,000 by 1990. Ohio's share of total U.S. milk production will remain near the 3.6 percent of the U.S. total.

Ohio's share of U.S. sheep production was over 3.0 percent in 1975 and will continue to fall to under 3.0 percent of the U.S. total over the next 10 years.

Ohio's production of broilers and turkeys has expanded in recent years. Continued expansion is expected though the state's share of U.S. production in each case may decline. Ohio's egg production may stablilize to 1990 though the state's share may fall to less than 3 percent of the total.

## THE BOTTOM LINE: FARM INCOME

Returns on equity capital should be adequate. When augmented by land appreciation the total returns should be favorable. This means a relatively good climate for those operators who have control of adequate resources, who market wisely and have good management. Those farmers unable, whether small or for other reasons, to make adjustments will be under severe pressure. The casualty rate of those financially over extended or lacking management capabilities will be high.

Off-farm income of farm families from investments, off-farm earnings of the operator, and off-farm employment of spouses now exceeds farm income. Off-farm

income to Ohio farm families will be even more important in 1990. Average incomes of Ohio farm families from all sources will continue to equal the incomes of non-farm families.